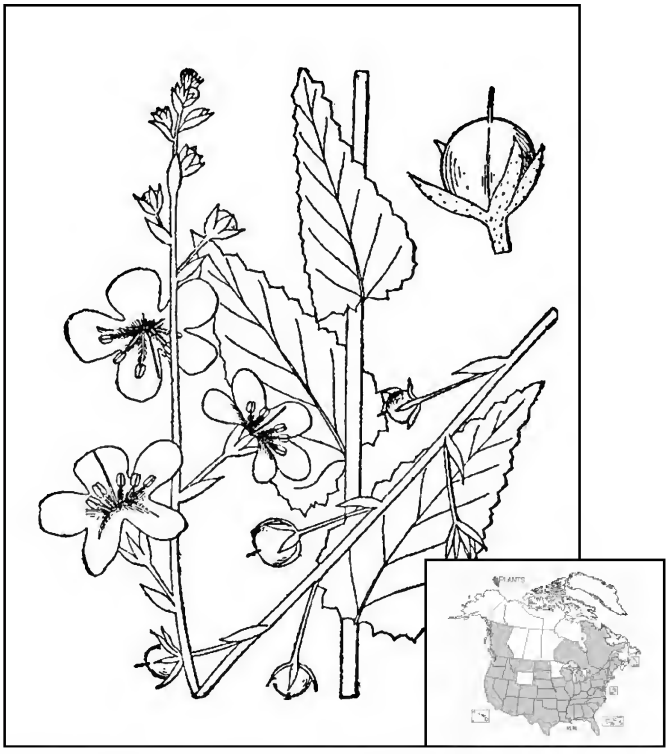
Castilleja linariifolia

Castilleja

Publication of the Wyoming Native Plant Society

March 2013, Volume 32(1)

Posted at www.wynps.org



Verbascum blattaria. From: USDA-NRCS PLANTS Database. Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions. 3 vols.* Charles Scribner's Sons, New York. Vol. 3: 174.

Wyoming, the Last Frontier - for Weeds

By Brian Mealor

We, in Wyoming, are fortunate in many ways. Beautiful scenery, friendly neighbors and opportunities for outdoor recreation abound. Another trend that is sometimes noted for Wyoming is that we have relatively fewer invasive weed species when compared to some of our neighboring states, and we are often one of the last states to be infested by exotic species. Moth mullein (*Verbascum blattaria* L.) was found and reported by Natrona County Weed and Pest in late summer 2012 along Interstate 25 north of Casper. The location and other collection information may be found at http://www.eddmaps.org/distribution/viewmap.cfm?sub=6586. Much like its close and more abundant relative. common mullein, moth mullein is frequently associated with areas where the soil has been disturbed. The population found and reported was growing in an area of recent construction activities.

Moth mullein is a biennial plant with very attractive yellow or white flowers that some people think resemble a moth. It spends its first year of growth as a basal rosette, a vegetative cluster of leaves. It produces flowering stems and seeds during the second year of growth. It spreads by disturbance, but has also been documented moving into perennial forage crops, pastures and rangelands in other parts of the country, thereby reducing forage quality. It has been intentionally planted for ornamental purposes, but its ability to invade natural areas makes it undesirable. An additional characteristic that makes it very difficult to control once a population becomes established is that the seeds it produces may stay alive in the soil for 100+ years! It is listed as a Class B noxious weed in Colorado.

The early detection of new weed infestations increases the probability of controlling if not eradicating them in Wyoming. If you find a plant that you suspect is a new invasive weed, please notify your local UW extension educator, weed and pest district or other members of the Native Plant Society.

(Brian Mealor is an Assistant Professor and Weed Extension Specialist at the University of Wyoming. More information about weed science research at the University can be found at www.weedcontrolfreaks.com)

In this issue:

WYNPS News

MARK THE DATE! This year's annual meeting in the Beartooth Mountains is shaping up to be one of our most diverse yet!! *Save the weekend of July 26-28!* Saturday evening's banquet will be at the Hunter Peak Ranch (on the Clarks Fork River, just north of the Chief Joseph Hwy. bridge crossing) which also provides overnight lodging. (There are almost no motels nearby. The Ranch recommends making reservations early for lodging; (307) 587-3711 or http://www.hunterpeakranch.com/). Forest Service campgrounds are located nearby. Look for details in the next issue and on the homepage soon! We need a banquet headcount so **there'll be a registration, beginning in March**. …See you in the Beartooths!

Calling All Field Trip Organizers: Are you planning a plant hike? We will run a state hike flyer again this year. Send the date, time, meeting place, hike leader/ contact, and the plant pursuits to the WYNPS address (below), or email bheidel@uwyo.edu by 19 April.

New Members: Please welcome the following new members to WYNPS: Kyle Bolenbaugh, Laramie; Gary Dean, Freedom; Ryan Folk, Columbus, OH; Gayle and Ronald Lien, Alta; Genevieve Skora, Cheyenne.

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

WYNPS Board – 2013

President: Dorothy Tuthill, Laramie
(dtuthill@uwyo.edu)
Vice-President: Walt Fertig, Kanab, UT
(walt@xpressweb.com)
Sec.-Treasurer: Ann Boelter, Laramie
(amb749@yahoo.com)
Board-at-large:
Joan Lucas, Wilson ('13-'14)
(joanlucaswy@gmail.com)
Drew King, Laramie ('12-'13)
(drewski@uwyo.edu)

Treasurer's Report: Balance as of 16 February: Scholarship = $2,373; General $5,094; Total = $7,467.

Contributors to this Issue: Ann Boelter, Karen Clause, Robert Dorn, Walt Fertig, Orval Harrison, Bonnie Heidel, Andrew King, Hollis Marriott, Brian Mealor, Amy Taylor, Dorothy Tuthill.

Message from the President

Yes, the days are getting longer! Though this winter has so far been mild and dry down here in the south, I'm glad the shortest days are behind us, and summer is on its way, even while I long for snow and fierce cold.

I'd like to welcome two new Board members this year: Walt Fertig and Joan Lucas. Both are long-time members of WYNPS, and I appreciate their willingness to give their valuable time to our society. Speaking of the board, we have already had our first meeting of the year, to discuss the annual meeting, and the organization of committees for an assortment of responsibilities. Here are some options:

Scholarship/grants: WYNPS offers grant opportunities for research and educational projects that promote native plants. This is a great opportunity to become familiar with native plant projects around the state.

Nominating: Nominate yourself, your friends, and the people you admire for offices in the WYNPS board and committees.

Conservation: Offer advice, write letters, and propose projects for WYNPS, related to conservation of native plants and habitats. Our organization can provide valuable service to agencies and species in sharing our expertise.

Outreach: Spread the name of WYNPS through local and regional events and educational opportunities. A first step is to develop materials that can be used around the state.

Horticulture: Gardening, anyone? Landscaping with drought-tolerant plants is a hot topic, and we should be the bandwagon promoting NATIVE drought-adapted plants.

I hope you each see at least one topic you'd love to work on. As added incentive, we (the Board) will scrounge up some really cool prizes for the first few volunteers. Please email me (dtuthill@uwyo.edu) with your selections, and any thoughts you'd like to share. I hope to hear from you soon!

Dorothy

Editor: Bonnie Heidel (bheidel@uwyo.edu)
Webmaster: Melanie Arnett (arnett@uwyo.edu)
Sublette Chapter: Karen Clause, President; Julie Kraft, Treasurer
Teton Chapter: Amy Taylor, Treasurer
Bighorn Native Plant Society: P.O. Box 21, Big Horn, WY 82833 (Jean Daly, Treasurer)

CHAPTER NEWS: See the Chapter Corner – p. 12

Plant Blogging

By Hollis Marriott

blog |bläg|; orig. web log
noun: website where a person or group regularly posts information, opinions, news, photos. verb: to add new material to a blog.
blogosphere: the collective community of blogs.

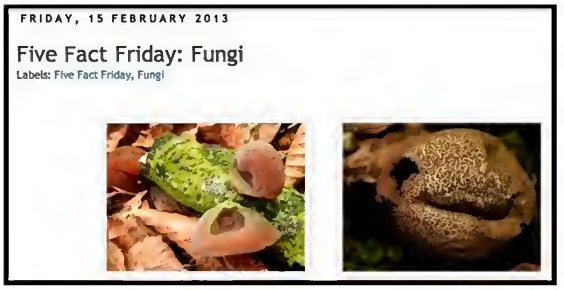
I've come to love the blogosphere. Most mornings over coffee I peruse the latest posts to see what my fellow nature lovers are doing, thinking, dreaming and puzzling over. They write of their latest adventures, research or cool things they've stumbled upon. Styles range from literary to academic, short to lengthy. There are travel journals, photo galleries, the latest science news, nature stories, educational articles, and sometimes just random encounters and thoughts.

Blogging is yet another embodiment of democratization provided by the internet. It's a way we common folk can experience the satisfaction of publishing, of expressing ourselves, of sharing our interests and excitement with like-minded people all over the world. The pool of potential readers and writers is enormous. With a little effort, we can find just the right audience for our posts, just the right bloggers to follow, and just the right part of the blogosphere to inhabit. You might consider joining us, if you haven't already.

Lucy of Loose and Leafy kindly keeps a tree-following page. You might consider joining, it's fun. Used with permission.

Setting up a blog is easy. The popular platforms, Blogger, TypePad and WordPress.org, provide guidance and templates. You don't need to know HTML, and adding photos, videos and locations is simple. It also is very easy to create a bad blog. Fortunately there's excellent advice available, including blogs about blogging. Blogging Basics 101's has good posts for beginners, starting with How Do I Start a Blog? If you have fame and fortune in mind, see the Blogging Starter Checklist (be prepared for lots of shameless self-promotion).

There is so much more to consider. What is your niche? What do you want to write about and in what style? long? short? humorous? serious? photo-rich? creatively-written? The best way to decide is by reading lots of blogs (see list below). Scan the ones they recommend. Figure out why you like the ones you do. Don't be afraid to experiment, and don't hesitate to change your blog when new ideas come to mind.



As Blogger says "Your blog is whatever you want it to be ... there are no real rules." Be creative. Notes of Nature came up with a cool Five Fact Friday series. Used with permission.

I stumbled into the blogosphere several years ago while planning a vacation. With Google's help, I found terrific blog posts about areas of interest, filled with descriptions, recommendations, photos, maps and links.

Before a trip to the San Rafael Swell, I discovered Written in Stone, a great resource for nature-geeks. Used with permission.

After happily wandering through the blogosphere for several days, I thought "I can do this too!" and started my own blog, In the Company of Plants and Rocks. At first I was all alone, casting my creations out into the vast space of the blogosphere where it seemed they couldn't possibly be found, but

eventually, amazingly, they were. There were more and more hits, some from far corners of the earth. I signed up to follow blogs of interest, and commented on posts I especially liked. My circle grew. And then I discovered blog carnivals.

Carnivals are one of the great joys of the blogosphere. I attend several on a regular basis. My botany carnival of choice is Berry Go Round, where each month the host compiles a list of posts on a wide range of plant topics, based on readers' submissions and other sources. BGR is very good place to find blogs to follow, and to get your posts out for others to read.

"Have you posted anything related to plant science lately? Then your post is probably suitable for Berry Go Round."

Blogging is a great way to share what's going on in your botanical life, and I highly recommend giving it a try. Do you already blog about plants? If so, please add a link to your site as a Comment at the blog version of this article. Consider joining a Berry Go Round carnival. I'm the host for March, and would love to include news from our part of the world. See the BGR submissions page for details.

The highlight of my last trip was a hike among bristlecone pines in the White Mountains ... ancient plants on ancient rocks.

A list of plant blogs I read, in no particular order:

The Artful Amoeba, a favorite, occasionally posts about plants, e.g. The surprising world of cyads (especially their sperm).
A local (South Dakota) botanist writes about North America's Native Plants at Suite 101, not exactly a blog but close.
Get Your Botany On! recently has been blogging about Green in Winter, featuring plants peeking through snow.
A Digital Botanic Garden has beautiful photos, as does Beyond the Human Eye, his microscopy blog.
Moss Plants and More is a good resource for all things bryological, e.g. Why are moss plants so short?
See No seeds, no fruits, no flowers: no problem for adventures in fern biology.
Cornell Mushroom Blog recently featured "Zap! Lightning, Gods, and Mushrooms" and "I ate fungus slime, and it made my breath minty fresh" (that would be your mouthwash).
Seeds Aside. "Plant gossips… are almost cotton!" ... a curious title and an interesting blog.
AoB Blog User-friendly posts on a variety of topics from The Annals of Botany and AoB Plants.
Plantwise Blog of the Plantwise initiative to improve food security and lives of the rural poor by reducing crop losses.
Notes of Nature offers a nice diversity of plant posts, including the Five Fact Friday series.
Catalog of Organisms sometimes features plants (encourage him!), e.g. When Ferns Don't Look Like Ferns.
The Daily Plant is always interesting, "A surprising look at the plants around us and how they've influenced our world."
Agricultural Biodiversity Weblog is "anything we find ... that relates somehow to the notion of agricultural biodiversity ... a big tent but one that the whole of humanity shelters beneath."
Alien Plantation "Plants and people change, evolve, together. We take advantage of them ... And they take advantage of us."
Teton Plants is a brand **new** blog, by the Teton Chapter of Wyoming Native Plant Society. It features hikes, lectures and other Grand Teton plant news.

Aggregates:
Nature Blog Network is a large collection of blogs ranked by number of page views. Search on "flora" for plant posts.
scienceblogging is an aggregate of aggregates! -- testimony to blogging's rapid growth.
Need still more plant reading? Check out these sites: Top 50 Botany Blogs and Top 100 Botany Blogs.

Monardella odoratissima,
a Showy Mint You Probably Haven't Seen

By Orval Harrison

About half of Wyoming's 32 species in the Mint Family (Lamiaceae) are found in disturbed soil and are non-native. However, the most showy of our mints -- Pacific monardella (*Monardella odoratissima*) -- is an indigenous mountain inhabitant of Lincoln County.

Pacific monardella is a clump-forming species with few to many stems growing from a branching woody base. The stems are not branched above, decumbent to erect, and about 13 inches tall. Most interestingly, the stems are somewhat woody below. These stems are usually sufficient in number and in compactness to create a very showy plant. Leaves are lanceolate, to 3 cm long, and glandular-dotted. Flowers are in rounded terminal clusters subtended by distinct oval bracts which are tinged purplish. These bracts and the calyx teeth have long hairs on the margins. The corolla has 2 lips with a total of 5 lobes which are nearly equal. The corolla is pink-purple and 13 to 20 mm long. Stamens are exerted beyond the corolla. Flowers usually open about mid-July. The plant is fragrantly aromatic.

Pacific monardella is reportedly easy to grow in a rock garden and can be propagated from cuttings (Bornstein et al. 2005). In the wild, it generally grows on open, dry, rocky slopes and ridges at medium to high elevations. However, it can also be found along streams and historic flood channels in gravelly soil at lower elevations.

My first encounter with this species was along the historic flood plain of Strawberry Creek in Star Valley less than one mile from U.S. 89 at an elevation of 6,040 feet. Later, I found it at medium elevations along the south slope of Strawberry Canyon over six miles upstream. Then Ron Hartman located it at a still higher elevation on the same drainage. These locations are all on the west slope of the Salt River Range.

Monadella odoratissima specimen, by Orval Harrison.

On the east side of the Salt River Range, adjacent to Murphy Creek, a tributary of Greys River, I located some 16 to 20 plants of Pacific monardella in 1978. Eight years later I found it in its more common habitat: a shale-rocky ridge and slope above Murphy Creek at 8,370 feet. Once again, in 1992, Hartman collected it on the opposite side of Murphy Creek at 9,988 ft.

Proceeding easterly to the Wyoming Range, I found one solitary plant of Pacific monardella in the rocky-gravel flood plain of Sheep Creek at a point one and one-half miles east of the confluence with Greys River. It is therefore likely that it grows on the high slopes of the Wyoming Range - perhaps into Sublette County.

For those wishing to see and sniff this attractive and aromatic plant without a prolonged search of the high country, the best locations are Prater Canyon east of Star Valley Ranch (near end of road along stream) and Strawberry Creek east of Bedford (reservoir to three-fourths mile below on south slope).

References

Bornstein, C., D. Foss, and B. O'Brien. 2005. California Native Plants for the Garden. Cachuma Press, Los Olivos, CA.

Using Remote Sensing to Map Mountain Pine Beetle Tree Mortality in the Medicine Bow Mountains

By Andrew King

The mountain pine beetle (MPB) infestation in the Rocky Mountain region has reached historically high levels (Bentz *et al.*, 2010). Large areas of beetle kill forest are a major concern and could have far reaching impacts on processes which are not fully understood including water budgets, fire regimes, succession, and nutrient cycles (Edburg *et al.*, 2012). Bark beetle impacts aren't always predictable at the stand scale (Rhoades *et al.*, 2013), therefore mapping the epidemic across the landscape is an important tool for ensuing ecological research at all scales. Remote sensing of the Earth's reflectance captured with aerial or satellite images has been used since the 1960s as a means of tracking MPB outbreaks across a landscape (Wulder *et al.*, 2006).

This project focused on mapping and analyzing beetle caused tree mortality in the Medicine Bow Mountains for lodgepole pine. We used a Landsat 5 TM satellite image from the fall of 2011 at 900 m^2 spatial resolution. Spatial resolution refers to the area each pixel in the image represents on the ground. For this image every pixel represents the average reflectance over a 900 m^2 area. While this may seem sizable a MPB epidemic often creates patches of tree mortality large enough to discern at such a level. The Thematic Mapper sensor onboard Landsat 5, records spectral reflectance in six different regions (or bands) of the electromagnetic radiation. Therefore, each pixel within the satellite image represents a location on the ground and has six different reflectance values associated with it. The reflectance from the different bands can then be analyzed and compared between live and dead lodgepole pine stands to determine if they are distinguishable using satellite imagery. We looked at the correlation between percent live basal area of lodgepole pines and reflectance or pixel brightness. Although this relationship has been documented in previous studies it needs to be tested for the Medicine Bow Mountains before full scale mapping can occur. To do this we established survey plots at known locations to document the percent live basal area of the trees for a particular pixel. We then ran a linear regression for percent live basal area versus mean pixel brightness to determine if a correlation exists for any of the six light bands.

Our preliminary results show that percent live basal area and pixel brightness are correlated for bands 4 and 5 (Figure 1). Band 5, which is the bandwidth covering short wave radiation has the highest correlation coefficient (r^2=0.5337) (Fig. 1). This correlation indicates that a relationship between tree mortality and pixel brightness does exist. The next step will be to use ancillary data including elevation and aspect to further tease out the differences between the live and dead lodgepole stands. The end goal is to use the observed spectral differences as well as ancillary data to create a MPB tree mortality map of the Medicine Bow Mountains. The accuracy of the developed map will then be tested by comparing it to locations with known mortality. This one time distribution map of MPB tree mortality can then be used for ecological modeling projects currently underway in the Medicine Bow Mountains to scale up to the entire mountains.

References

Bentz, B.J., J. Regniere, C.J. Fettig, E.M. Hansen, J.L., Hayes, J.A. Hickey, R.G., Kelsey, J.F., Negron, and S.J. Seybold. 2010. Climate change and bark beetles of the Western United States and Canada: direct and indirect effects. Bioscience 60: 602-613.

Edburg, S.L., J.A. Hicke, P.D. Broks, E.G. Pendall, B.E. Ewers, U. Norton, D. Gochis, E.D. Gutmann, and A.J.H. Meddens. 2012. Cascading impacts of bark beetle-caused tree mortality on coupled biogeophysical and biogeochemical processes. Frontiers in Ecology and the Environment 10: 416-424.

Rhoades, C.C., J.H. McCuthchan, Jr., L.A. Cooper, D. Clow, T.N. Detmer, J.S. Briggs, J.D. Stednick, T.T. Veblen, R.M. Ertz, G.E. Likens, and W.M. Lewis, Jr. 2013. Biogeochemistry of bettle-killed forests: Explaining a weak nitrate response. Proc. N. Acad.. Sci 110: 1756-160.

Wulder, M.A., C.C. Dymond, J.C. White, D.G. Leckier, and A.L. Carroll. 2006. Surveying mountain pine beetle damage of forests: A review of remote sensing opportunities. Forest Ecology and Management 221: 27-41.

(This article describes scholarship work under an award by Wyoming Native Plant Society in 2012.)

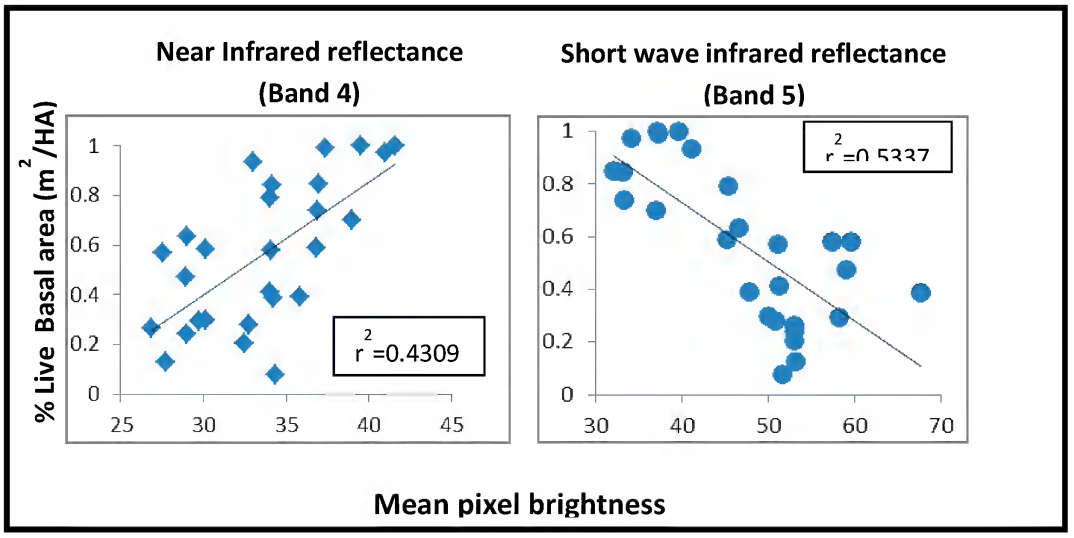


Fig. 1: The average percent live basal area for lodgepole pine (m^2/ha) for n=25 stands vs. the mean pixel brightness. Pixel brightness values were derived from a Landsat5TM image using only polygons not dominated by red needled trees. Percent live basal area (m^2/ha) was calculated from data gathered during field surveys at Chimney Park (Medicine Bow Mountains, WY) in 2012.

NEW: Hay Creek Research Natural Area

By Chelsea Monks, Black Hills National Forest

Research Natural Areas (RNA) form a national network of Federal lands set aside to preserve areas representative of common ecosystems in natural condition. RNAs represent an array of significant natural ecosystems and their inherent processes for use in non-manipulative research and education. Once established, RNAs are protected to maintain natural conditions and processes as well as biodiversity at the genetic, species, and ecosystem levels. As part of the 2005 Forest Plan Amendment: Phase II, the Black Hills National Forest designated four areas as RNAs, three in South Dakota and one in Wyoming, Hay Creek. In September of 2012, the area was officially established as a RNA and became a part of the national system.

Hay Creek RNA is located approximately nineteen miles north of Sundance, WY in the northern part of the Bear Lodge Mountains. This area was chosen to be a RNA because within its 577 acres, are high-quality, representative communities including ponderosa pine/bur oak woodland (*Pinus ponderosa/Quercus macrocarpa* woodland), ponderosa pine/snowberry forest (*Pinus ponderosa/Symphoricarpos albus* forest), paper birch/beaked hazel forest (*Betula papyrifera/Corylus cornuta* forest), and bur oak/ironwood forest (*Quercus macrocarpa/Ostrya virginiana* forest) (Marriott et al. 1999, Marriott and Faber-Langendoen 2000). All of these forest types except ponderosa pine/snowberry forest have rankings of global rankings of imperiled or vulnerable (NatureServe 2013).

Wyoming Natural Diversity Database conducted an evaluation of Hay Creek RNA using existing information and field visits to the area. This report mapped sensitive species and documented 319 vascular plant species found within the boundaries of the RNA, almost a third of the Black Hills flora currently known to occur in Wyoming (USDA Forest Service 2012), including four additions to the state flora (Heidel 2008, Heidel and Larson 2009). The assemblages of species found, most closely reflect the assemblages associated with eastern deciduous forests. This area exhibits amazing biological diversity because of these assemblages associated with Rocky Mountain and Great Plains floras.

Hay Creek RNA includes the sandstone outcrops that form the rim of the valley, and encompasses the spring-fed headwaters of the Middle Fork of Hay Creek. Springs, seeps, and spring-fed marshes are found on north-facing lower slopes and ponds are found mid-slope on the south- and east-facing sides of the valley. A mosaic of wetlands and shrublands of varying successional stages form the riparian corridor along the Middle Fork of Hay Creek. Now that the Hay Creek Research Natural Area is established, researchers interested in using this unique area for research purposes should contact the Rocky Mountain Research Station.

References

Heidel, B. 2008. Report on the floristic survey in the Proposed Hay Creek Research Natural Area. Prepared for Black Hills National Forest by the Wyoming Natural Diversity Database, Laramie, WY.

Heidel, B. and J. Larson. 2009. Noteworthy collections: Wyoming. Madroño 56:118-119.

Marriott, H., D. Faber-Langendoen. 2000. The Black Hills Community Inventory; Vol. 2: Plant Community Descriptions. The Nature Conservancy, Midwest Conservation Science Center and Assn. for Biodiversity Information. Midwestern Resource Office. Minneapolis, MN.

Marriott, H., D. Faber-Langendoen, A. McAdams, D. Stutzman, and B. Burkhart. 1999. The Black Hills Community Inventory – Final Report. The Nature Conservancy, Midwest Conservation Science Center, Midwestern Resource Office. Minneapolis, MN.

USDA Forest Service. 2012. Establishment Record for Hay Creek Research Natural Area on the Bearlodge Ranger District, Black Hills National Forest, Wyoming. Record housed at the Rocky Mountain Regional Office. Golden, CO.

Additions to the Flora of Wyoming

Since the 2001 publication of Robert Dorn's third edition of *Vascular Plants of Wyoming*, new species have been discovered in the state. Additions are published in professional journals, deposited in the Rocky Mountain Herbarium (RM) or other public repositories, and noted by botanical bean-counters at RM and collaborators. This newsletter provides an informal update to get the word out around the state.

The new species fall into several categories. Many are introduced (deliberately, or more often by accident) and show up on roadsides and in pastures. Some are native plants previously known from outside the state's boundaries. A small number are new to science. See the front page story and four more examples below.

Conyza ramossissima (L.) Cronq. by Bonnie Heidel

When is a weed not a weed? Dwarf horse-weed (syn. *Erigeron divaricatus* Michx.; also called spreading fleabane) is native to the Great Plains. As a wind-dispersed annual, it endured fires, droughts, and bison herds. Tolerance to natural disturbance confers a resilience or predilection for man-made disturbance, from barnyards or towns to roadways. In this vein, it is referred to as "a weed in lawns and open disturbed sites" (Great Plains Flora Association 1986). It might be more appropriately referred to as *weedy* in its habitat preference, though indigenous to states from North Dakota to Texas.

Prairie dog towns are an intense form of natural disturbance, so the discovery of *Conyza ramosissima* in 2012 at the prairie dog town of Devils Tower National Monument places it in the Wyoming flora as a native that is probably naturally-occurring, though ruderal. I collected it in 2012 one morning before the prairie dog town residents stirred in a Devils Tower NM study. The study feeds into a slate of botanical interpretive materials being prepared for visitors at all interest levels. Other 2012 additions to the Monument checklist included spotted knapweed, collected by Hollis Marriott. She promptly reported the spotted knapweed plants in the campground for pre-emptive eradication. …In every sense of the word, spotted knapweed is a weed, and a noxious one at that!

References

Great Plains Flora Association. 1986. *Flora of the Great Plains.* Univ. Press of Kansas. Lawrence, KS.

Dipsacus sylvestris L. by Walter Fertig

In October 2011, I had just completed several days of field work in western Wyoming and was beginning the trek home to southern Utah. Hunting season had just opened that morning and I thought it wise to forgo camping for a night in town and the opportunity for a shower and hot meal. It was not quite dusk when I rolled in to the Motel 6 off the

Above: *Dipsacus sylvestris*.

Interstate in Evanston. There was a meadow bordering an irrigation ditch next to the motel and I thought I might get in a few more minutes of plant "hunting". Tramping around the wet spot I found a gold mine of exotic weeds, but one tall, prickly plant with opposite leaves and elongate involucre bracts really stood out. I recognized it right away as teasel, one of our few representatives of the Dipsacaceae, and probably a new distribution record for Uinta County. Teasel is a common roadside weed in northern Utah, so it was not a surprise to see it just a few miles north of the state line.

It was only after I returned home and unpacked the plant press that I realized my plant was not fuller's teasel (*Dipsacus fullonum*), a European

garden escapee known from Platte County in eastern Wyoming, but field teasel (*D. sylvestris*). The two species can be distinguished by the shape of the sharp bracts that subtend the small, pale purple flowers and make up the distinctive, cone-like inflorescence. In field teasel the bracts terminate in a straight, awn-like point, while in fuller's teasel the receptacle bracts are strongly recurved. In the past, people used dried floral spikes of *D. fullonum* to "full" or raise the nap of certain types of cloth (something now done by machinery). Many researchers believe that *D. sylvestris* is the wild ancestor of *D. fullonum*, and the two are sometimes treated as subspecies of the same species (under *D. fullonum*, the older name).

Cirsium barnebyi Welsh & Neese by Walter Fertig

Technically, Barneby's thistle has been known in Wyoming since at least 1994, when it was reported from Carbon County by Arthur Cronquist in the *Intermountain Flora* volume on Asteraceae. There are no specimens of this native taxon in the collections of the Rocky Mountain Herbarium, however, and the origin of Cronquist's report has not been confirmed. In August 2011, I was exploring the Green River shale slopes along the north side of the Bear River Divide in southern Lincoln County, when I encountered an unusual thistle with small flower heads and densely woolly-pubescent leaves. Initially, I thought the plants were the woolly phase of the normally green-leaved *Cirsium pulcherrimum*, or possibly the Wyoming endemic, *C. aridum*. Several months elapsed before I looked at the specimen, and then to my surprise it keyed to *C. barnebyi* based on its nearly sessile leaves and small involucre size. Stan Welsh named *C. barnebyi* in 1981 from specimens in the Uinta Basin of northeastern Utah, and it was otherwise known only from northern Utah, northwestern Colorado, and the mystery collection from Carbon County, Wyoming. Like many newly discovered native species in the state, Barneby's thistle appears to be quite rare, though perhaps just under-collected (thistles are generally less sampled than other heraceous species for obvious reasons!).

Navarretia furnissii L.A. Johnson & L.M. Chan
By Walter Fertig
(*Editor's note: The following is excerpted from Sego Lily (36(1): 11*).

Leigh Johnson and a team from Brigham Young University announced the discovery of a new species of *Navarretia* in the January 2012 issue of the journal *Phytotaxa*. *Navarretia* (sometimes called pincushion-plant for its prickly leaves and floral bracts) is a genus of approximately 35 annual herbs in the Polemoniaceae found primarily in California and western North America. Individual species can be difficult to identify in part because the flowers are miniscule (often less than 0.9 mm long) and other taxonomic characters are obscure.

Johnson's research team was using DNA sequencing data to tease out the origin of the allotetraploid species *N. propinqua* (*N. intertexta* var. *propinqua*). Allotetraploids are derived from hybridization between two related diploid taxa. Earlier work had shown that one parent was *N. intertexta* and the other was probably the recently named *N. saximontana*. When they began to look at the genetics of *N. saximontana*, however, Johnson's group discovered that specimens ascribed to *N. saximontana* fell into two distinct groups: typical tetraploid *saximontana*, and an unnamed diploid. Only the diploid (or a very close relative) could be the putative second parent of *N. propinqua*. By accident, Johnson and team had stumbled upon a new species!

Named for Blaine Furniss, a retired professor of botany from BYU and mentor to many students, *Navarretia furnissii* differs from *N. saximontana* and *N. propinqua* in having shorter corollas (4.7 mm long or less) stamens not exserted beyond the corolla, consistently 2-3 pronged calyx lobes, and fewer seeds. Furniss's pincushion-plant is endemic to the Wasatch and Caribou mountains of northern Utah and southeastern Idaho and the adjacent Salt River Range of western Wyoming (with a disjunct occurrence in the mountains of north-central Colorado). Like many other *Navarretia* species, *N. furnissii* grows in seasonally moist depressions or the margins of pools in open meadows, sagebrush, or aspen communities. It flowers from late June to August.

References

Johnson, L.A., L.M. Chan, K. Burr, and D. Hendrickson. 2012. *Navarretia furnissii* (Polemoniaceae), a new diploid species from the intermountain western United States distinguished from tetraploid *Navarretia saximontana*. Phytotaxa 42:51-61.

Spencer, S.C. and A.E. Spencer. 2003. *Navarretia willamettensis* and *Navarettia saximontana* (Polemoniaceae), new species from ephemeral wetlands of western North America. Madroño 50(3):196-199.

Growing Native Plants

Part 7. Woody Vines

By Robert Dorn

Woody vines are used primarily for screening or providing foliage, flowers, or fruits where the space is too narrow for typical shrubs. They also tend to grow more rapidly than many shrubs. To see the plants in color, go to the Society website.

Clematis ligusticifolia, White Virginsbower, is a fast growing, deciduous vine with pinnately compound leaves. The flowers are white to cream and up to 1 inch across with few to many in the leaf axils. Male and female flowers are on separate plants. The female plants will be the most attractive with the fruits being achenes with feathery styles to 2 inches long. The plants occur naturally along roadsides or in thickets usually climbing on fences, trees, or shrubs in the basins, valleys, and plains. They prefer full sun or partial shade and moist to dry, well drained soil. This is a vigorous grower but can be pruned heavily if desirable. It can be grown from seed after removing the styles. Plant in fall outdoors. It is also in the nursery trade.

Clematis ligusticifolia, Bonneville County, Idaho

Clematis occidentalis, Purple Virginsbower, is a deciduous vine with compound leaves with 3 leaflets. The flowers are light blue to purple and up to 2.5 inches long, nodding on long stalks from the leaf axils. The fruits are a cluster of achenes with attractive, feathery styles to 2.5 inches long. It occurs naturally in wooded areas in the mountains. It prefers light to moderate shade and well drained, loamy soil. It can be grown from seed. First remove the styles and sow outdoors in fall or cold stratify for 60 days for spring planting. It is also in the nursery trade.

Clematis occidentalis, Lincoln County, Montana

Lonicera dioica, Limber Honeysuckle, is a deciduous vine with simple, opposite leaves. Flowers are tubular, yellowish, purplish, orange, or reddish and up to 1.75 inches long. They are clustered at the branch tips above a pair of broad, fused leaves. The fruits are orange-red berries that may be poisonous. The plants occur naturally in moist woods and thickets or edges of woods in the mountains and foothills. They prefer light to moderate shade and moist, cool, loamy, well drained soil. It can be grown from seed sown outdoors in fall or from hardwood cuttings.

Lonicera dioica, Lawrence Co., South Dakota

Parthenocissus vitacea, Virginia Creeper, is a deciduous vine with palmately compound leaves with 5 leaflets. The leaves turn red in fall. Flowers are inconspicuous. The fruits are blue berries that ripen

to blue-black. The berries are toxic to humans. The plants occur naturally in moist woods and thickets from the plains and basins to the foothills. They prefer full sun to light shade and moist, loamy, well drained soil. Woody vines, especially those with tendrils like this one, should not be grown against a building with lap siding since they may get under the siding and cause problems. It can be grown from greenwood cuttings or rootstock divisions. Seed must be removed from the pulp, cold stratified for 60 days, then germinated with about an 85 degree F temperature during the day and about 68 degrees at night. Germination is slow. Surface sow to allow light exposure. It is also in the nursery trade.

Parthenocissus vitacea, Sioux County, Nebraska

Vitis riparia, Riverbank Grape, is a deciduous vine with tendrils and is a strong climber. The leaves are simple, lobed, and toothed and to 6 inches long and wide. They turn yellow in fall. The flowers are inconspicuous but fragrant. The fruits are in clusters, dark purple to black, with each fruit about 0.4 inch across. They are tart but edible. The plants occur naturally in riparian forests and thickets in the plains and basins. They prefer full sun or light shade and moist, well drained soil. The plants can climb over trees and shrubs and smother them so plant where there is a non-living structure for them to climb on. It is often grown on a fence and trained into a hedge. It can be grown from seed but the seed may need 5 months cold stratification. It can also be grown from hardwood cuttings and it is in the nursery trade.

Vitis riparia, Platte and Albany Counties

"Like" us on Facebook

We currently have 61 "likes" on Facebook, and lots of pretty pictures, so check us out (Wyoming Native Plant Society). Keep up to date on current events, dates, hikes, and more. We have reached 118 people with recent posts, and everyone is welcome to post pictures, questions, or comments.

Chapter Corner ~

Teton Chapter of WYNPS has a new email address: tetonplants@gmail.com and a new website: www.tetonplants.wordpress.com . Look for events and postings, such as the following:

Tuesday, March 26, 2013, 6:00 pm: Fire Ecology: Past, Present, Future. Many large wildfires have burned across Idaho and the West in recent decades, often threatening people and property. We will likely have more large fires and smoke in the future. What are the implications for native plants and ecosystems now and in the future? **Penny Morgan** is a professor in the College of Natural Resources at the University of Idaho. She directs the Wildland Fire Program there and is originally from Jackson Hole. **Where:** Teton County Library Auditorium. Refreshments and gathering at 6:00, program starts promptly at 6:30.

Pinedale Chapter of WYNPS has upcoming programs including an overview of common Wyoming plant families, using technical references and guides, wildflower photography, water wise landscaping with native plants, and more. A slate of summer hikes is in the works!

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Please note our new address!

Wyoming Native Plant Society is a non-profit organization established in 1981 to encourage the appreciation and conservation of the native plants and plant communities of Wyoming. The Society promotes education and research through its newsletter, field trips, annual student scholarship and small grants awards. Membership is open to individuals, families, or organizations. To join or renew, please return this form. See the return address below.

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Name: _____

Address: _____

_____

Email : _____

Check one: [ ] New member [ ] Renewing member
[ ] Renewing members, check here if this is an address change.
[ ] Check here if you prefer to receive the newsletter electronically

Membership
[ ] WYNPS annual membership: $7.50
[ ] WYNPS annual membership with scholarship support: $15.00 ($7.50 for membership and $7.50 for Scholarship fund)
[ ] WYNPS Lifetime membership: $200 ($150 for membership and $50 for Scholarship fund)
[ ] Sublette Chapter annual membership: $5.00
[ ] Teton Chapter annual membership: $5.00

Total enclosed: _____ THANK YOU !